Test Report

Company Name
SHENZHEN JDB TECH. CO. LTD.

Address
ROOM 1105-1108, NO.2 BUILDING, EST MALL BUSINESS CENTER,
NO.698 CHANGBANG ROAD, XIACHENG DISTRICT, 310004,
HANGZHOU, CHINA

The following sample(s) and sample information was/were submitted and identified by/on the behalf of the client

Sample Name 2layers PCB
Material pcb
Sample Received Date Jul. 24, 2023
Testing Period Jul. 24, 2023-Aug. 2, 2023

Test Requested

<table>
<thead>
<tr>
<th>No.</th>
<th>Test Item</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Coefficient of Linear Thermal Expansion</td>
</tr>
</tbody>
</table>

Test Result(s): Please see the following pages.

Approved by: Annie Lang
Approved Signatory: Annie Lang
Date: Aug. 18, 2023

No. RDAAD41CF3
Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China
Test Report

Report No. A223036704410100105

Tested Sample(s)

<table>
<thead>
<tr>
<th>Sample No.</th>
<th>Sample Name</th>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2230367044101001</td>
<td>2layers PCB</td>
<td>pcb</td>
</tr>
</tbody>
</table>

Sample Photo(s)

![Sample Photo](image-url)
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Test Item: Coefficient of Linear Thermal Expansion

1. Test Equipment

<table>
<thead>
<tr>
<th>Equipment Name</th>
<th>Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal Mechanical Analysis(TMA)</td>
<td>TMA450</td>
</tr>
</tbody>
</table>

2. Environmental Conditions

Temperature: 23.8℃; Humidity: 48%RH

3. Test Standard: IPC-TM-650 2.4.24C

4. Test Conditions

(1) Preconditioning: Sample is preconditioned by baking for 2h at 105℃, then cooled to room temperature in a desiccator.

(2) Test condition: Heat from 30℃ to 270℃ at a rate of 10℃/ min in N₂.

5. Test Result(s)

<table>
<thead>
<tr>
<th>Test Sample</th>
<th>Coefficient of Linear Thermal Expansion (ppm/℃)</th>
<th>50℃~260℃ Percentage of Thermal Expansion (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A2230367044101001</td>
<td>&lt;Tg 48.8704</td>
<td>3.067</td>
</tr>
<tr>
<td></td>
<td>&gt;Tg 239.474</td>
<td></td>
</tr>
</tbody>
</table>
Test Report

Test Curve:

Remark: The testing data and result(s) in this report is(are) just for scientific research, education, internal quality control and product development etc.

Statement:
1. This report is considered invalid without approved signature, special seal and the seal on the perforation;
2. Company Name and Address shown on Report, the sample(s) and sample Information was/were provided by the applicant who should be responsible for the authenticity which CTI hasn’t verified;
3. The result(s) shown in this report refer(s) only to the sample(s) tested;
4. Without written approval of CTI, this report can’t be reproduced except in full;
5. In case of any discrepancy between the English version and Chinese version of the testing reports(if generated), the Chinese version shall prevail.

*** End of Report ***